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An Account of an AURORA BOREALIS *ſeen in full Sunſhine.*

By the Rev. HENRY USSHER, *D.D. F.R.S. and M.R.I.A.*

THE following phænomenon being very uncommon, if not entirely new, I think it worth communicating to the Academy, principally with a view to learn whether any other perſon has obſerved a ſimilar one at any time. Read Dec. 1ſt, 1788.

ON Saturday night, May 24, 1788, there was a very bright aurora borealis, the coruſcating rays of which united, as uſual, in the pole of the dipping needle. I have always obſerved that an aurora borealis renders the ſtars remarkably unſteady in the teleſcope. The next morning, about eleven, finding the ſtars flutter much, I examined the ſtate of the ſky, and ſaw whitiſh rays aſcending from every part of the horizon, all tending to the pole of the dipping needle, where at their union they formed a ſmall thin and white canopy, ſimilar to the luminous one exhibited by an aurora in the night. Theſe rays coruſcated or ſhivered from the horizon to their point of union.

THESE

THESE effects were diſtinctly ſeen by three different people, and their point of union marked ſeparately by each of them.

THERE is certainly no reaſon for confining the effects of aurora borealis to the night, although it then makes its moſt magnificent diſplay, contraſted by the darkneſs of the ſky.

THE tumulous motion of the ſtars at certain times in ſerene ſkies has been taken notice of by the Abbe De La Caille at the Cape of Good Hope; and M. De La Lande remarks that ſometimes, when a ſouth weſt wind prevails at Paris, the ſame effect is produced. An aurora borealis in this country is generally ſucceeded by a ſouth weſt wind, and frequently the wind veers round to that point during its appearance; now if this phænomenon, as ſuggeſted by an ingenious member of this Academy, ſhould be inflammable air in a ſtate of inflammation, the water ſo produced by ſuch inflammation might ſatisfactorily account for this unſteadineſs of the rays, whether we ſuppoſe it either in the act of abſorption, or in the ſtate of veſicular vapour deſcending from the upper regions of the atmoſphere.

THAT inflammable air, at leaſt ſome ſpecies of it, contains iron, cannot well be diſputed, as its effect on an infuſion or tincture of galls ſhews the preſence of iron. That there is ſome connection, hitherto unexplored, between magnetiſm and the aurora borealis ſeems highly probable. The unſteadineſs of the magnetic needle during the appearance of this phænomenon is known to every one, and indicates ſuch connection; the union of the radii of a ſtrong

ſtrong aurora borealis in the pole of the dipping needle ſtrengthens the ſame conjecture, which is ſtill further confirmed by the ſituation of the luminous northern arch, generally the firſt ſymptom of a ſtrong aurora, and from whence, in all probability, the name was taken; for the higheſt point of this arch is always found in the magnetic meridian.

THIS phænomenon is certainly more common now than it was a century or even half a century ago; this I find moſt people, even the moſt illiterate, agreed in. Upon examining the accounts of the authenticated appearances of the aurora borealis, ſo carefully collected by the celebrated De Mairan, I perceive a chaſm in the liſt of obſervations for about forty years in the laſt century, in the middle of which chaſm, nearly, is the year 1661, in which year we are told the variation of the needle at Paris was 0. We ſeem alſo to collect from the ſame author's reſearches that the frequency of this appearance ſeems to have decreaſed with the diminution of the eaſtern variation, and it now ſeems to encreaſe with the encreaſing weſtern variation. What real connection there may be between the *variation* of the needle and the aurora borealis, or the cauſe of it, I acknowledge myſelf entirely ignorant; but perhaps this trifling hint may engage the attention of others who have both more leiſure and abilities for ſuch an intereſting diſquiſition.